

REMARKS

Status of Claims

Claims 1-22 were under examination. Claim 4 has been incorporated into claim 1. Claim 4 is accordingly cancelled.

New claim 23 represent the combination of claims 1 and 4, with two further limitations, namely, that a concrete pump is provided on the structural frame (14) (while, in claim 1, it could be provided either on the frame or on the trailer, as discussed in paragraph [00011] of the application as filed), and that the a multi-arm articulated boom is connected to the boom stand (22), as supported by the figures and associated text. In view of the cancellation of claim 4, no additional claim fees are required.

Specification

The Examiner requests that the translated specification be checked for the presence of possible minor errors.

Applicants have reviewed the specification.

The Abstract is objected to as being too long. Additionally the abstract of the disclosure is objected to because it is too lengthy (approx 293 words) and it contains the word "said" (at least in line 13).

Applicants have amended the Abstract

Claim Rejections - 35 USC § 102

Claims 1-22 are rejected under 35 U.S.C. §102(b) as being anticipated by Irsch, U.S. Patent No. 6,032,809.

Irsch is cited for disclosing a "structurally equivalent" multi-axle movable crane configuration (see Figs. 5a-5e) which includes *at least* a semi-trailer tractor (2) with a receiving hitch part (16) connected to a roller head (49), the roller head (49) being operably connected to a telescoping section (48) having a main jib (21) and a basic jib (23), and further, a telescopic crane (40) having a truck (42), a crane cab (46), a superstructure (45), a drivers cab (44) and a rail (54).

Applicants respectfully traverse, particularly in view of the amendment of claim 1 to recite that the second articulation linkage (B) is freely pivotable about its articulation axis when in the travel configuration. Irsch does not teach such a configuration. Thus, the claims can not be anticipated by Irsch.

Applicants provide the following more detailed comments.

Concrete pumps are conventionally mounted upon multi-axle chassis with continuous rigid framework. For heavy vehicles with total capacities of greater than 24 tons multi-axle heavy duty chassis with oversized axle loads are necessary. These can travel on public roads only with special permission and cannot use many light duty roads and bridges.

The inventive solution is based primarily upon the idea, that a separate trailer is provided, which has its own undercarriage, and in the transport configuration is connectible with the truck undercarriage via a coupling arm. The inventive trailer includes a pivot mount rotatable in the vertical axis for receiving the section of the set of arms extending, when folded in the transport configuration, beyond the back end of the truck chassis, and which is comprised of the second boom arm which is unfolded in the extended position of the second articulation linkage relative to the first boom arm and at least one part of the remaining boom arms situated in their folded-in positions relative to the second boom arm, and which together with the first boom arm forms the coupling arm. Thereby a significant increase in the reach of the concrete distribution is achieved, wherein simultaneously in the transport configuration the department of transportation set legally permissible vehicle length, vehicle height and axle load are not exceeded.

The present invention thus comprises:

(a) a mobile concrete pump (including truck undercarriage) with boom stand and boom arms, and

(b) a trailer which has its own undercarriage and in the transport configuration is connectible with the truck undercarriage via a coupling arm (of boom arms), namely, the second articulation linkage (B) which is freely pivotable about its articulation axis when the mobile

concrete pump and separate trailer are joined in the travel configuration, and wherein boom arms (2 through 7) are loaded on the trailer when in the transport condition

Comparing this to Irsch, Irsch teaches:

(a) a semi-trailer tractor 2 with a semi-trailer 1, wherein the boom is mounted on the semi-trailer, and

(b) a separate, independent truck 42 with a telescopic crane, which is not connectable with the semi-trailer tractor in the transport configuration.

According to the Examiner, Irsch discloses a structurally equivalent multi-axle movable crane configuration (see Figs. 5a-5e) which includes *at least* a semi-trailer tractor (2) with a receiving hitch part (16) connected to a roller head (49), the roller head (49) being operably connected to a telescoping section (48) having a main jib (21) and a basic jib (23), and further, a telescopic crane (40) having a truck (42), a crane cab (46), a superstructure (45), a drivers cab (44) and a rail (54).

Fig. 5a-5c referred to by the Examiner show Irsch units (a) and (b) connected while **parked** (with ground support (outriggers, legs) 55 extended).

Basically, Irsch teaches that, given greater weight and size of moveable telescopic cranes, and legal limitations for road vehicles, for transport purposes the main jib should be separated from the main mobile crane and loaded onto a separate transporter for road transport. So, for transport, the boom section is loaded onto a semitrailer and transported separately from the mobile crane.

So, it is easy to see that the system of transport used by Irsch is very different from the present system of transport. Accordingly, applicants compare the present claim 1 against the teaching of Irsch. This is somewhat complicated by the fact that the Examiner has not indicated whether he is comparing the present mobile concrete pump against the the tractor and semi-trailer of Irsch, or the mobile crane of Irsch, i.e., the

- the transport configuration of Irsch (Fig. 5d, 5e), or
- the connected configuration of Irsch (for transferring jib from crane truck to transport trailer, Fig. 5a, 5b, 5c).

Irsch does not teach "*A mobile concrete pump*". In order that this term is given patentable weight, Applicants recite "*concrete pump provided on the structural frame (14)*" in the body of new claim 23.

Irsch teaches "*a structural frame (14) mounted on a truck undercarriage (10) of a truck chassis (12), supportable upon the ground upon lifting of the truck undercarriage,*" but only for the mobile crane (which the Examiner compares to the present trailer), not for the tractor and semi-trailer (which the Examiner compares to the present mobile concrete pump).

Irsch does not teach "*a concrete pump provided on the structural frame (14)*" as recited in claim 23.

If Irsch has "*a boom stand (22) rotatable about a vertical axis (20) and provided upon the structural frame (14)*" then it would be on the mobile crane behind the truck cabin. This mobile crane does not carry a jib or boom in the transport condition and is not connected to a trailer in the transport condition, and certainly not connected via a second articulation linkage (B) freely pivotable about its articulation axis when the mobile concrete pump and separate trailer are joined in the travel configuration.

Irsch teaches a crane jib, not a "*concrete distribution boom (24) in the form of a multi-arm articulated boom*". A concrete distribution boom inherently has means such as a conduit for conveyance of concrete, otherwise it would not be a concrete conveyance boom, and Irsch has no such means. Accordingly, new claim 23 recites "*concrete conduit*" in the claim.

Claim 23 further recites that the boom is "*fixed to said boom stand (22)*" since in the transport condition the boom of Irsch is removed from the mobile crane.

Irsch shows a jib which is only telescopic. Irsch does not teach "*a first boom arm (1) pivotable relative to the boom stand (22) via a first articulation linkage (A) with horizontal articulation axis* and further boom arms (2 through 7) pivotable relative to each other via articulation linkages (B-G) about horizontal articulation axis".

Irsch does not teach *"a trailer (32) connectable with the truck undercarriage (10) via a coupling member (36) when in the transport configuration"* since the mobile crane platform with the boom stand does not connect to a trailer in the transport condition.

If one compared the tractor (2) and semi-trailer (1) of Irsch with our concrete pump, then other limitations such as *"supportable upon the ground upon lifting of the truck undercarriage"*, *"boom stand"*, and *"concrete pump"*.

The semi-trailer of Irsch might be compared with our *"trailer including a pivot mount (40) rotatable about a vertical axis for receiving the set of arms projecting beyond the end of the truck undercarriage (10) in the travel configuration,"* but if the Examiner takes this interpretation, then Applicants point out that:

- the present trailer and truck undercarriage are two separate elements, connected via a coupling member (36),
- the coupling member is first and second boom arms,
- in Irsch the semi-trailer is connected to the tractor undercarriage via pivot means, not via coupling member (36) made of boom arms.

And, the present boom arms are connected to the boom stand in the transport condition, while in Irsch the boom (jib) and boom stand (crane truck) are separated for transport.

In addition, advantageous embodiments claimed in the dependent claims are not taught in Irsch, for example,

- in the transport configuration the first articulation linkage between the boom stand and the first boom arm in its position facing backwards counter to the direction of travel of the truck undercarriage is secured to the structural frame and the second articulation linkage is freely pivotable about its articulation axis, whereby the truck undercarriage of the truck chassis and the undercarriage of the trailer exhibit an optimal orientation with the ground both when passing over a hill as well as when passing through a trough;

- the trailer can be coupled with the truck undercarriage via a, for example, telescopic tow bar;

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- the trailer may be self-steering, and may include a steering device coupled electronically with the steering device of the truck chassis; and
- to maneuver the trailer in the decoupled condition, the trailer may include a motorized wheel drive.

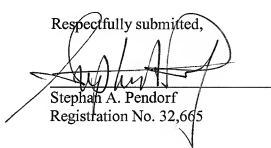
Accordingly, Irsch clearly not anticipating the present invention, withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 16-0877.

Should further issues remain prior to allowance, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

Patent Central LLC
1401 Hollywood Blvd.
Hollywood, FL 33020-5237
(954) 922-7315

Respectfully submitted,



Stephan A. Pendorf
Registration No. 32,665

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